# Thin-film solar module specialist CSG Solar AG raises €24m from a consortium lead by Apax Funds and Good Energies

Thalheim, Germany [X January] 2005: A consortium led by Apax Funds and Good Energies have invested €24m in CSG Solar AG, a company that has developed one of the world's most promising second-generation thin-film solar-module technologies. Existing investors in CSG, Q-Cells AG, Renewable Energy Corporation and IBG also participated in the financing round. The investment will finance the construction and ramp-up of CSG's first production facility designed for an annual output of 25MW.

Second-generation, thin-film modules have a fundamentally lower cost base than first-generation solar modules produced using silicon wafers. CSG Solar has one of the best cost-efficiency roadmaps of all the thin-film concepts on the market and in development. More importantly though, CSG Solar's modules do not suffer from the durability, stability, scalability, raw material supply or environmental issues inherent in the other competing thin-film concepts. CSG Solar will initially target non-area constrained segments of the booming solar market, which is a market complementary to the one targeted by first-generation based modules.

David Hogg, CSG Solar's CEO stated: "The CSG Solar technology team has been working toward this moment for nearly ten years. Now, at a time when the supply of silicon wafers threatens to retard the ten year 30% per year solar industry growth rate, with this successful capital raising CSG Solar will very soon be producing solar electric panels. Importantly, these panels will use approximately 100<sup>th</sup> of the silicon used in wafer based solar cells and yet still delivering 65% of the power."

Christian Reitberger of Apax Partners commented: "CSG has developed the best-inclass thin-film technology, and has a very compelling value proposition, particularly in the burgeoning non-area constrained farming and industrial applications markets. We see CSG as a great complement to Q-Cells, Apax Fund's existing investment in the solar industry."

Marcel Brenninkmeijer of Good Energies commented: "CSG ideally fits into our investment portfolio with its unique thin-film approach and strong technology position. We are very much looking forward to developing CSG together with the CSG team and our friends at APAX, IBG, REC and Q-Cells."

Erik Sauar, CTO of REC stated: "REC's core business is based on silicon and wafer manufacturing for the high efficiency, mainstream part of the module market. CSG represents an excellent technology for low cost manufacturing of lower efficiency modules, a market which will be very important both for rural grid-connected applications and for all the millions of small off-grid applications. We see a strong potential in the future of CSG if the company is successful with its technology development, and believe the CSG technology can take a significant position next to the wafer based technology."

Anton Milner, Q-Cells' CEO stated: "We are very excited about the technological and market potential of the CSG technology. It will provide a complementary line of lower cost, high value adding products for the photovoltaic market, which efficiently serve the needs of customer segments which the Q-Cells products do not directly address. We believe that PV will strongly expand for the foreseeable future and that the CSG

technology, as the current Q-Cells technology, can play a leading role in the market development and strongly benefit from this growth."

Dinnies Johannes von der Osten, IBG's CEO commented: "As initial investor in Q-Cells we consider CSG's approach to be a solid stand alone investment with high rate of return potential fitting perfectly into Q-Cells successfully implemented strategy as state of the art technology adopter and front runner of renewable energy solutions. Because of the huge business potential of CSG's technology proposition we decided right from the beginning to participate as investor into CSG as well."

## About CSG

CSG Solar AG, a new German company, will manufacture 1.4 m2 photovoltaic (PV) modules that convert sunlight directly into electricity without any noise or pollution with its patented Crystalline Silicon on Glass (CSG) technology.

The first CSG factory will be built at Thalheim in the German State of Saxony-Anhalt to thereby benefit from strong local and State government support and from the Company's strategic relationship with Q-Cells AG, Europe's largest manufacturer of solar cells. CSG Solar AG's wholly owned Australian subsidiary, CSG Solar Pty Limited, will perform ongoing development of the CSG technology in Sydney to realise the full potential of the CSG technology.

CSG Solar plans to start construction of its first manufacturing facility designed for 25MW of annual production very early in 2005, with initial production expected in 2006. CSG Solar will invest in the order of €40 million and create employment for 100 people. Expansion of the first manufacturing facility to achieve the full planned output is anticipated later in 2006.

Crystalline Silicon on Glass (CSG) technology allows the production of PV modules using crystalline silicon less than 2  $\mu m$  in thickness on a sheet of glass. The CSG technology combines the relatively low manufacturing cost of thin film PV with the established strengths of crystalline silicon used in today's dominant wafer-based technologies. The development of this technology has progressed steadily over the past decade, and is now ready for large-scale manufacturing. Importantly, the CSG modules have demonstrated remarkably high yield and stability, properties essential for low-cost manufacturing and market acceptance.

## **About Apax Partners**

Apax Partners is one of the world's leading private equity investment groups, operating across Europe, Israel, and the United States. With over 30 years of direct investing experience, Apax Partners' Funds provide long-term equity financing to entrepreneurs to build and strengthen world-class companies. It pursues a balanced equity portfolio strategy, investing in companies at all stages of development from early stage to buy-out.

Apax Partners' Funds invest in companies across its six chosen global sectors of: information technology; telecommunications; healthcare; media; financial services; retail and consumer. Some of Apax Partners Funds' technology investments include: Acol, Dialog Semiconductor, Elliptec, Q-Cells, Systemonic and SuSE. For additional information, visit the web site at <a href="https://www.apax.com">www.apax.com</a>.

# **About Good Energies**

Good Energies is one of the leading investors in solar photo-voltaics. The silent power of sunlight transforming light into clean energy will make solar energy the single largest source of power by the end of this century. Good Energies contributes to this challenge of sustainability through its investments in leading solar photovoltaics companies and wind developers. Please visit for additional information <a href="https://www.goodenergies.com">www.goodenergies.com</a>.

#### About IBG Beteiligungsgesellschaft Sachsen-Anhalt mbH

IBG Beteiligungsgesellschaft Sachsen-Anhalt mbH is a leading regional investor in East Germany for technology based seed financing in the federal states Saxony-Anhalt, Saxony and Thuringia. Its portfolio of nearly 70 active companies comprises investments in biotechnology, medical devices, chemistry, environmental technology and mechanical engineering. IBG accompanies its investments with professional consulting service and allocates its network.

# **About Renewable Energy Corporation**

Renewable Energy Corporation is a vertically integrated solar energy company with its main focus on silicon feedstock and wafers through its subsidiaries Solar Grade Silicon and ScanWafer. REC is today the only PV company worldwide that manufactures its own silicon feedstock for processing into wafers, cells and modules, and REC will probably become the world largest wafer manufacturer in 2005. Hence the company is in a unique position for further growth and cost reduction in todays feedstock and wafer limited PV market.

#### **About Q-Cells**

Founded in 1999 Q-Cells AG, based in Thalheim, Germany, is today the leading independent manufacturer of photovoltaic cells worldwide and one of the most rapidly growing companies in the Photovoltaic industry. The company produces some of the highest efficiency cells worldwide. The company targets primarily the high performance market of PV module and system suppliers, where its products offer high customer value-added. Q-Cells is currently in the process of increasing its capacity to 290 MWp and is expected to be one of the Top 3 global players in 2005.